SDMS DOCID# 1138574

Baxter Blasting Company August 24, 2012

dba M.J.Baxter Drilling Co.

Lakeside, CA

The United States Environmental Protection Agency

Stringfellow Superfund Site

Pyrite Street Quarry
Riverside County, California

Baxter Blasting Company *CA Lic. 309281*

Dba *M. J. Baxter Drilling Co.*

P.O. Box 245
El Cajon, California 92022-0245

619-443-7800 office
619-561-4434 fax

August 24, 2012

Mr. Keith Olinger
Enforcement Office (SFD-7-5)
U.S. EPA, Region 9
75 Hawthorne St.
San Francisco, CA 94105

Reference: 3900 Pyrite Street, Riverside County, California

Subject: Request additional information re: Stringfellow Superfund Site 8-17-12

Dear Mr. Olinger:

We have completed a second archive search for all existing files and information regarding any operations MJ Baxter Drilling Company conducted at the Stringfellow Pyrite Quarry. We were able to retrieve information for the years 1999 and 2000.

At this time Baxter does not have or know of anymore files or have access to anymore information regarding Baxter's operations or any other contractor's operations at the Stringfellow Pyrite Quarry.

If you have any further questions, please contact me or Jeff Brust at 619-443-7800.

Sincerely,

Glenn Inverso
President
MJ Baxter Drilling Co.

cc: Jeff Brust

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

August 17, 2012

VIA FEDERAL EXPRESS: # 529286512126

Glenn A. Inverso, President
Baxter Blaster Company
dba M.J. Baxter Drilling Company
12485 Highway 67
Lakeside, CA 92040-1158

Re: Follow-up Information Request Letter Related to Stringfellow Superfund Site

Dear Mr. Inverso:

We have received and reviewed the February 3, 2012 response to the United States Environmental Protection Agency's ("EPA") November 3, 2011 104(e) Request for Information ("Request") relating to the Stringfellow Superfund Site (the "Site") located in Riverside County, California, submitted by Baxter Blasting Company, which does business as M.J. Baxter Drilling Company (the "Company"). We appreciate the Company's timely response, and the information provided to date. We would like to request certain additional information based on our review of the Company's February 3, 2012 response. EPA asks that you respond to the following supplemental requests.

Supplemental Requests:

1. In its February 3, 2012 response, the Company stated and provided documentation that it operated as a blasting contractor at the Site from 2002 to 2007. Information provided to EPA indicates that the Company may have been involved in blasting operations at the Site as early as 1984. Please provide the entire time period during which the Company has been involved in blasting or other operations at the Site and describe the types of operations conducted.

2. If explosives were used by the Company at the Site during any time period prior to 2002, provide a complete list of the explosives and their chemical components, the time period that the respective explosives were used, and a map showing the locations where the respective explosives were stored and detonated. Provide copies of MSDSs for all explosives used by the Company at the Site prior to 2002.

3. If any of the explosives or other substances used by the Company prior to 2002 contained perchlorate, provide a complete description of those substances. Indicate the number of explosions per year (prior to 2002), approximate volume of perchlorate substances used per explosion at the Site, and the storage and disposal practices in effect during the Company's entire period of

operations at the Site for materials containing perchlorate. Include all documentation referencing or detailing the Company's use and disposal of perchlorate-containing substances

4. Describe the portion(s) of the Site where the Company conducted blasting or other operations during any time period prior to 2002. Provide a scaled map of the Site that includes the locations of any blasts, significant buildings, equipment and geographical features during this time period, including the locations of all chemical and waste storage areas, and the boundaries of mining or quarrying districts and/or individual mines or quarries located within the Site.

5. Information provided to EPA indicates that from approximately 1960 to 1980, companies which may have operated as government contractors used perchlorate in the manufacture and testing of explosives, rocket fuel and other propellants at the Site. To the best of the Company's knowledge, identify any operators at the Site who also may have used perchlorate. Provide the time period during which each operated, a map showing the locations of their operations, a description of the type of operations each conducted, and all documentation in the Company's possession which relates to any parties who conducted such manufacturing and testing operations or whose operations may have involved perchlorate-containing substances.

EPA has the authority to request this information pursuant to Section 104(e) of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. §9604(e). Although we anticipate your cooperation in this matter, please note that failure to comply with EPA's information request, or to adequately justify such failure to respond, may subject you to an enforcement action seeking to compel compliance and collect penalties of up to $37,500 per day of noncompliance pursuant to Section 104 (e)(5) of CERCLA, 42 U.S.C. Section 9604(e)(5).

Please refer to the Request for definitions and instructions with respect to your response, including instructions as to the assertion of a business confidentiality claim and the determination of the scope of our request. Those definitions and instructions continue to apply and are hereby incorporated into this supplemental request for information. A copy of the November 3, 2011 Request is enclosed for your convenience.

Please provide your response, in writing, within thirty (30) calendar days of your receipt of this letter. Your response should be directed to:

Keith Olinger, Enforcement Office (SFD-7-5)
U.S. EPA, Region 9
75 Hawthorne St.
San Francisco, CA 94105

If the Company has any questions regarding this letter, please contact Keith Olinger at (415) 972-3125 or olinger.keith@epa.gov. Questions regarding the Site's cleanup status should be directed to the Remedial Project Manager, Julie Santiago-Ocasio, at (415) 972-3525 or santiago-ocasio.carmen@epa.gov. Questions regarding legal matters can be directed to Andrew Helmlinger at (415) 972-3904 or helmlinger.andrew@epa.gov. Thank you for your prompt attention to this matter.

Sincerely,

Kathi Moore

Kathi Moore, Manager
Case Development Cost Recovery Section
Superfund Division

Enclosure

Request #1:

Please provide the entire time period during which the Company has been involved in blasting or other operations at the Site and describe the types of operations conducted.

Answer:

Upon further investigation we discovered the earliest files for work done at the Pyrite Stringfellow Quarry was for years 1999 and 2000.

It is beyond our ability to reconstruct any other records by any other means and current personnel were not employed with Baxter at that time.

The only operation conducted at the Site was rock drilling and blasting rock.

Request #2:

If explosives were used by the Company at the Site during any time period prior to 2002, provide a 1) complete list of the explosives and chemical components, 2) the time period that the respective explosives were used, and 3) a map showing the locations where the respective explosives were stored and detonated.

Provide copies of MSDSs for all explosives used by the Company at the Site prior to 2002. See attachment for products listed below.

Answer:

1) Complete list of the explosives and chemical components-

Product Description	Total Qty Used
SEC Detagel	85 lbs
Trojan Cast Boosters	257 lbs
Austin Helix PNG 90 Dynamite	255 lbs
Dyno Bagged ANFO	30930 lbs
Agrium Prilled AN	29920 lbs
SEC Slurran 806	5182 lbs
Dyno Non-electric Detonators	1304 ea

See attached MSDSs for all chemical components.

2) Time period respective explosives used- Year 1999 (6 shots) Year 2000 (2 shots)

Year 1999	Year 2000
1/12/99	1/12/00
1/29/99	12/05/00
2/03/99	
2/19/99	
8/27/99	
11/9/99	

3) Map showing locations where the respective explosives were used-

We are not able to determine the location in on the Site where the explosives were used. They were undoubtedly used in the area of aggregate excavation in the quarry.

Material Safety Data Sheet

Dyno Nobel Inc.
2650 Decker Lake Boulevard, Suite 300
Salt Lake City, Utah 84119
Phone: 801-364-4800 Fax: 801-321-6703
E-Mail: dnna.hse@am.dynonobel.com
FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300
CANUTEC (CANADA) 613-996-6666

MSDS # 1020
Date 01/24/05

Supercedes
MSDS # 1020 07/20/04-
1142L 01/23/04
1142H 01/23/04

SECTION I - PRODUCT IDENTIFICATION

Trade Name(s): Superprill™, Prilled Ammonium Nitrate, Industrial Grade
LoDAN, Ammonium Nitrate, Industrial Grade
HiDAN, Ammonium Nitrate, Agricultural Grade

Chemical Name: Ammonium Nitrate, NH_4NO_3

Synonyms: Prilled Ammonium Nitrate; Ammonium Nitrate: Industrial, Fertilizer or Agricultural Grade; AN; 35-0-0.

Product Appearance & Odor: White to off-white, solid prills or fine granules. Slight ammonia odor.

DOT Hazard Shipping Description: Ammonium Nitrate Based Fertilizers 5.1 UN2067 III Label: Oxidizer

NFPA Hazard Classification:		HMIS (III) Classification:	
Health (Blue)	2	Health	1
Flammability (Red)	0	Flammability	1
Reactivity (Yellow)	3	Physical Hazard	3
Specific Hazard (White)	Oxidizer	PPE	E

SECTION II - HAZARDOUS INGREDIENTS

			Occupational Exposure Limits	
Ingredients:	CAS#	% (Range)	ACGIH TLV-TWA	OSHA PEL-TWA
Ammonium Nitrate	6484-52-2	98 – 100%	None[1]	None[2]

[1] Use limit for particulates not otherwise regulated (PNOR): Total dust, 15 mg/m^3 ; respirable fraction, 5 mg/m^3 .
[2] Use limit for particulates not otherwise classified (PNOC): Inhalable particulate, 10 mg/m^3 ; respirable part., 3 mg/m^3 .

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

SECTION III - PHYSICAL DATA

Boiling Point: Decomposes between 177-210°C (350-410°F)
Vapor Density: Not Applicable
Percent Volatile by Volume: Not Applicable
Evaporation Rate (Butyl Acetate = 1): Not Applicable
Vapor Pressure: Not Applicable
Density: 0.72 - 1.00 g/cc (Poured bulk density)
Solubility in Water: 192 g/100 ml @ 20°C (68°F)
118 g/100 ml @ 0°C (32°F)
Melting Point: 170°C (337°F)

DYNO
Dyno Nobel
Groundbreaking Performance

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable
Flammable Limits: Not Applicable
Extinguishing Media: Use water only. Do not attempt to smother. Do not use salt water, dry chemical, carbon dioxide, steam or foam.
Special Fire Fighting Procedures: Fight only small fires in initial stages when not confined. Immediately ventilate structures and transport containers to minimize confinement and prevent pressure buildup that increases the possibility of explosion. In advanced stage, or for any large fire or fire engulfing confining containers, abandon fire-fighting efforts and quickly evacuate all personnel to a safe distance of at least 2,500 feet. Use large quantities of water to cool. If possible, plug drains or dike channels to prevent either molten material or water runoff from entering storm drains or surface waters. Firefighters should wear self-contained breathing apparatus (SCBA) and full turnout gear.
Unusual Fire and Explosion Hazards: May explode or detonate under confinement and high temperatures. Ammonium nitrate emits toxic nitrogen oxides when heated to decomposition and will release ammonia to air upon reaction with strong alkalis. Explodes more readily if contaminated with organic materials or other fuels.

SECTION V - HEALTH HAZARD DATA

Carcinogenicity: **NTP: No** **IARC Monographs: No** **OSHA Regulated: No**

Effects of Overexposure

Not found to be toxic by oral, dermal and inhalation exposure as defined by OSHA.
Eyes: May cause irritation, redness, tearing or blurred vision.
Skin: Prolonged contact may irritate skin, resulting in reddening of the skin and possible dermatitis, or may aggravate pre-existing dermatitis.
Ingestion: May cause gastric irritation, abdominal spasms, nausea, pain and faintness. Large amounts may be harmful if swallowed, potentially causing systemic acidosis and methemoglobinemia.
Inhalation: Dust is irritating to mucous membranes and respiratory tract, and may cause sore throat, coughing, difficult breathing and severe lung congestion, and may also aggravate pre-existing lung conditions. Inhalation may also lead to ingestion effects. Delayed reactions may result in pulmonary edema and chemical pneumonitis.
Systemic or Other Effects: Decomposition of ammonium nitrate at high temperatures produces highly toxic Nitrogen Oxides (NO_X). High level exposure to NO_X can cause serious injury or death. Chronic exposure to NO_X can produce respiratory and/or kidney damage.

Emergency and First Aid Procedures

Eyes: Irrigate with running water for at least fifteen minutes. If irritation persists, seek medical attention.
Skin: Remove contaminated clothing. Wash with soap and water.
Ingestion: Seek medical attention. Do not induce vomiting. Treat for methemoglobinemia.
Inhalation: Remove to fresh air, seek medical attention.
Special Considerations: If an exposure to toxic NO_X vapors occurs, restore or support breathing as necessary, seek immediate medical attention. Observe for delayed reactions to NO_X exposure that may involve pulmonary edema.

SECTION VI - REACTIVITY DATA

Stability: Stable under normal conditions. May explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in large quantities.
Conditions to Avoid: Keep away from heat, flame, ignition sources and strong shock.
Materials to Avoid (Incompatibility): Flammable liquids, organic solvents and materials, explosives, metal powders and other combustible materials. Reducing agents, chlorides, phosphorus and sulfur. Corrosives (strong acids and bases).
Hazardous Decomposition Products: Nitrogen Oxides (NO_x), Ammonia (NH_3), Nitric Acid (HNO_3).
Hazardous Polymerization: Does not occur.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in Case Material is Released or Spilled: Protect from all ignition sources. In case of large fire or fire engulfing containers, evacuate an area not less than 2,500 feet in all directions. If possible, plug drains or dike channels to prevent either molten material or water runoff from entering storm drains or surface water. Notify authorities in accordance with emergency response procedures. Only personnel trained in emergency response should respond. If no fire danger is present, and product is undamaged and/or uncontaminated, repackage product in original packaging or other clean DOT approved container. Ensure that a complete account of product has been made and is verified. Follow applicable federal, state, and local spill reporting requirements. Contact of this product with water may result in a reportable release.
Waste Disposal Method: Disposal must comply with Federal, State and local regulations. Ammonium Nitrate is used as a fertilizer and, in some cases, recovered material may be put to beneficial use. If product becomes a waste, it is potentially regulated as a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR, part 261. Review disposal requirements with a person knowledgeable with applicable environmental law (RCRA) before disposing of any hazardous material.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Ventilation: Not required for normal handling. Provide adequate ventilation as needed to avoid exceeding exposure limits for nuisance dust, especially in confined spaces.
Respiratory Protection: Wear NIOSH approved respirator when airborne exposure limits for nuisance dust are exceeded. Refer to OSHA standard 1910.134 for proper selection and use of respirators.
Protective Clothing: Wear long sleeved clothing and protective gloves to prevent prolonged and repeated skin contact.
Eye Protection: Safety glasses with side shields or chemical goggles are recommended. Eye baths should be provided when direct eye contact is likely.
Other Precautions Required: None.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storage: Store in cool, dry, non-combustible buildings and avoid contamination. Automatic sprinklers are appropriate. Keep separate from other chemicals and combustible materials. Refer to applicable fire and building codes.
Empty containers may contain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flames, sparks or other sources of ignition without first thoroughly decontaminating the containers; they may evolve poisonous gas and cause injury or death.
Other Precautions: Drains in storage area should be plugged to prevent entry of molten material during fire conditions.

DYNO Dyno Nobel Groundbreaking Performance

SECTION X - SPECIAL INFORMATION

EPCRA Section 311/312 Hazard Categorization

Acute	Chronic	Fire	Pressure	Reactive
X		X		

The reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372 may become applicable if the physical state of this product is changed to an aqueous solution. If an aqueous solution of this product is manufactured, processed, or otherwise used, the nitrate compounds category and ammonia listing of the previously referenced regulation should be reviewed.

Slightly toxic to aquatic organisms as defined by USEPA.

Disclaimer

Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, the information contained herein, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. The information contained herein is provided for reference purposes only and is intended only for persons having relevant technical skills. Because conditions and manner of use are outside of our control, the user is responsible for determining the conditions of safe use of the product. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product or information. Under no circumstances shall either Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.

The Ensign-Bickford company

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BY:

MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name:

The Ensign-Bickford Company

Emergency Telephone No:

Product Information: 1-801-798-8613
1-860-843-2276
CHEMTREC: 1-800-424-9300

Address:

P.O. Box 310, Spanish Fork, Utah 84660
Or
660 Hopmeadow St., Simsbury, CT 06070

Chemical Name and Synonyms:

Mixture

Trade Name and Synonyms:

Trojan™ Spartan™ Boosters
Trojan™ LU Boosters (6oz and larger)
Trojan™ LSU Boosters
Trojan™ LP Boosters
Trojan™ 6L-1H Booster
Trojan™CB-15 Booster
Trojan™Twinplex Boosters
Trojan™ C-30 Cone Booster
ETI HDP Boosters
Pentex D Boosters
Pentex 50 Boosters
Pentex 16 SC Booster
Pentex 450 Booster
Optiprime™ Boosters

Cage Code: 96336

EBCo Product Code: N/A

SECTION II - HAZARDOUS INGREDIENTS

Ingredients (one or more):	C.A.S.	OSHA PEL	ACGIH TLV
Pentaerythritol Tetranitrate (PETN)	78-11-5	None Established	None Established
Trinitrotoluene (TNT)	118-96-7	1.5mg/m^3	0.1mg/m^3(skin)
Aluminum (Al)	7429-90-1	15.0mg/m^3	10.0 mg/m^3

SECTION III - PHYSICAL DATA

Boiling Point:
N/A

Specific Gravity:
1.5 – 1.7 g/ml

Vapor Pressure:
N/A

Percent Volatile:
N/A

Vapor Density:
N/A

Evaporation Rate:
N/A

Solubility in Water:

PETN:	Insoluble
TNT:	0.013 g/100g 20°C
Al:	Insoluble

Melting Point:

PETN:	140° C
TNT:	79° C
Al:	660°C
PETN/TNT Eutectic:	76°C

Appearance and Odor:
Yellow, brown or gray/green solid in a cardboard or plastic canister

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point:
N/A

Exposure Limits:
LEL: N/A **UEL:** N/A

Special Fire Fighting Procedures:
DO NOT FIGHT FIRES INVOLVING EXPLOSIVES. ISOLATE THE AREA. EVACUATE PERSONNEL TO A SAFE PLACE. EXPLOSIVE DETONATION CAN OCCUR.

Extinguishing Media:
Do not fight fires involving explosives. Water may be applied through a fixed extinguishing system (sprinklers) as long as people need not be present for the system to operate.

Unusual Fire and Explosion Hazards:
May detonate if exposed to shock, heat, impact, sparks or friction. Oxides of nitrogen and carbon are released when the product is burned.

Auto Ignition Temperature:
N/A

SECTION V - ROUTES OF ENTRY/EFFECTS OF OVEREXPOSURE

Eye Contact:	Flush immediately with running water for at least 15 minutes. Seek medical attention.
Skin Contact:	Wash thoroughly with soap and water if skin irritation occurs; seek medical attention.
Inhalation:	PETN can lower blood pressure. PETN is a vasodilator. If detonation fumes are inhaled remove victim to fresh air. If not breathing, give artificial respiration. Possible liver damage from TNT. May affect ability of blood to carry oxygen. Seek immediate medical attention.
Ingestion:	See; Inhalation. Seek immediate medical attention.

No chemical found in these products covered by this MSDS are considered to be carcinogenes by The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP), or OSHA.

SECTION VI-EMERGENCY FIRST AID PROCEDURES

Eye Contact:	Flush using running water for 15 minutes. If irritation persists, seek medical attention.
Skin Contact:	Wash thoroughly with soap and water if skin irritation occurs; seek medical attention.
Inhalation:	Remove victim to fresh air. If not breathing administer artificial respiration. Seek medical attention.
Ingestion:	Seek medical attention.

SECTION VII- REACTIVITY DATA	
Stability:	Stable
Conditions To Avoid:	May detonate if exposed to sufficient heat, shock, friction, impact and static charge.
Incompatibility:	Strong acids, alkalis and oxidizers.
Hazardous Decomp Products:	Detonation, burning or exposure to incompatible chemicals will produce hydrogen and oxides of carbon and nitrogen.
Hazardous Polymerization:	Will not occur.

SECTION VIII - SPILLS OR LEAK PROCEDURES	
Steps To Be Taken In Case Material is Released or Spilled:	Review Fire and Explosive Hazards and Safety Precautions before proceeding with clean-up. Use appropriate Personal Protective Equipment during clean-up. Isolate the spill area; removing all sources of ignition from the location. Carefully collect the spilled material and place in a (Velostat) conductive bag. Contamination of this material with sand, grit or dirt will render the material more sensitive to detonation. If safe; separate material that is not contaminated from contaminated material. "Loose" powder spills should be wetted down and cleaned using a damp rag or sponge. Store all collected material in a secure area, to await proper disposal. Only qualified personnel should perform any clean-up and disposal of material.
Waste Disposal Method:	Waste is classified as hazardous with the characteristic of reactivity. EPA Hazardous Waste Number D003. Any such waste should be handled in accordance with local, state and federal regulations. The current-preferred method of destruction of such waste is open burning. All destruction is to be performed by qualified personnel at a licensed treatment facility.

The Ensign-Bickford company

MATERIAL SAFETY DATA SHEET

SECTION IX - SPECIAL PROTECTION INFORMATION	
Respiratory Protection:	OSHA/NIOSH approved dust, mist and fume filter respirator.
Ventilation:	Mechanical ventilation is generally not recommended for control of "Secondary" high explosives that are unreacted due to the possible accumulation of sensitive explosive in the ventilation system. Ventilation should be used in underground mines or if any special product testing is to be performed indoor for the control of carbon and nitrogen oxides.
Protective Gloves:	Protective gloves of rubber or Neoprene should be worn.
Eye Protection:	Safety glasses.
Other Protection:	Protective overalls.

SECTION X - OTHER PRECAUTIONS	
Precautions To Be Taken In Handling and Storage:	Transportation and storage must be in accordance with local, state and federal regulations. Store away from sparks or other ignition sources. Avoid heat, shock and impact.
Other Precautions:	Refer to Manufacturer's Instructions and Warnings supplied with product.
SARA 313 Information:	This product does not contain any chemical that is subject to the reporting requirements of SARA Title III; Section 313.

Latest Revision Date: 8/6/1998

Prepared by: Farrell G. Badger

Detagel

Material Safety Data Sheet

SEC Investments Corp. LLC.
5700 N. Portland, Suite 301 / Oklahoma City, OK 73112 / Phone: (405) 947-0765 / Fax: (405) 947-0768

SECTION 1 - PRODUCT INFORMATION	
TRADE NAME:	Detagel
SYNONYM:	NA
CHEMICAL FAMILY:	Watergel Slurry High Explosive
FORMULA:	Mixture
CAS NUMBER:	None
UN/NA NUMBER:	UN0241
DOT HAZARD CLASS:	Explosive, Blasting, Type E, Class 1.1 D

SECTION 2 - HEALTH ALERT

DANGER - If misused or disposed of improperly, material could explode and cause death or serious injury.
DO NOT HANDLE WHEN IN DOUBT!
See section VIII - Personal Protection
CHEM-TEL, INC. (800) 255-3924.

SECTION 3 - HEALTH HAZARD INFORMATION

EYE: May cause moderate irritation.
SKIN: May cause moderate irritation characterized by redness and/or rash.
INHALATION: Inhalation of decomposed products may irritate the respiratory tract. Prolonged exposure to these fumes may result in respiratory difficulties (shortness of breath, etc.) and possibly more severe toxic effects.
INGESTION: Swallowing large quantities may cause toxicity characterized by dizziness, bluish skin coloration, methemoglobinemia, unconsciousness, abdominal spasms, nausea, and pain. Constituents can cause iodine uptake inhibition in the thyroid – this is not normally significant unless long term exposure at fairly high levels (not likely to occur in gel form) occurs. Avoid ingestion.

SECTION 4 - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush with large amounts of water. Seek medical aid.
SKIN CONTACT: Remove contaminated clothing. Wash skin thoroughly with soap and water.
INHALATION: Remove from exposure, if breathing stops or is difficult, administer artificial respiration or oxygen. Seek medical aid.
INGESTION: Give 8-16 oz. of milk or water. Induce vomiting. Seek medical aid.

SECTION 5 - RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT/ HAZARDOUS INGREDIENTS

EXPOSURE LIMIT (PRODUCT): None required for product.

HAZARDOUS INGREDIENTS:	PERCENT	Exposure Limit	CAS No.
Ammonium Nitrate	40-60	Not Listed	6484-52-2
Sodium Nitrate	14-19	10 mg/m3 (nuisance dust)	7631-99-4
Ammonium Perchlorate	1-5	10 mg/m3 (nuisance dust)	7601-89-0
Nitric Acid*	4-6	2ppm (ACGIH TWA)	7697-37-2
Hexamine*	5-9	10 mg/m3 (nuisance dust)	100-97-0
Aluminum	3-5	2 mg/m3	7429-90-5

*React to form Hexamine Nitrate Salt
NOTE: All ingredients are present in a gelled slurry matrix and individual hazard may not be present in this formulation.

SECTION 6 - REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY: Heat (confinement); Stacking (burning).
INCOMPATIBILITY: Can react violently or explode, with reducing agents and organic materials. Avoid amines, strong alkalis & acids.
HAZARDOUS REACTION / DECOMPOSITION PRODUCTS: At high temperatures, especially >374°F, may emit severe toxic fumes of nitrogen oxides. *CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:* Not applicable.

SECTION 7 - FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT & METHOD: NA *AUTO IGNITION TEMPERATURE:* Explodes *EXTINGUISHING MEDIA:* Water *FLAMMABLE LIMITS (% BY VOLUME/AIR): LOWER:* NA *UPPER:* NA
FIRE-FIGHTING PROCEDURES: When explosive is burning, EVACUATE AREA. Avoid breathing vapor. Don't disturb fire, as burning explosives can become very sensitive to impact and friction, detonation can occur.

Detagel

Material Safety Data Sheet

SECTION 7 - FIRE AND EXPLOSION HAZARD INFORMATION (con't.)

FIRE & EXPLOSION HAZARDS: Dangerous when exposed to heat or flame. Can support combustion of other materials involved in a fire and is capable of undergoing detonation if heated to high temperatures, especially under confinement, including being piled on itself in a burning fire. When heated to decomposition, highly toxic fumes may be emitted. Do not return to area of explosion until smoke and fumes have dissipated. Dry alkali or amine salts are explosive.

SECTION 8 - PERSONAL PROTECTION INFORMATION

EYE PROTECTION: Safety goggles approved for the handling of explosives materials.
SKIN PROTECTION: Neoprene, natural rubber, polyethylene or polyvinyl chloride gloves. Use barrier creams, hand protection and protective clothing.
RESPIRATORY PROTECTION: Not normally required. Mechanical filter or supplied air type respirator as required for concentrations exceeding the occupational exposure limit.
VENTILATION: Maintain adequate ventilation. Use local exhaust if needed.

SECTION 9 - PERSONAL HANDLING INSTRUCTIONS

HANDLING: Explosives should not be abandoned at any location for any reason. Do not handle during electrical storms.
STORAGE: Store in a cool, dry, well-ventilated area remote from operations. Storage area should be of non-combustible construction and in accordance with appropriate BATF regulations. Organic materials, flammable substances and finely divided metals should be stored separately. Flames, smoking and unauthorized personnel are prohibited where this product is used or stored. Protect against physical damage, static electricity and lightning.
WARNING: Use of this product by persons lacking adequate training, experience and supervision may result in death or serious injury. Obey all Federal, State, and local laws / regulations applicable to transportation, storage, handling, and use of explosives.
DISTANCE: Always stay away from area of explosion or disposal sites. Stay behind suitable barriers.

SECTION 10 - SPILL & LEAK PROCEDURES

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED (IN ADDITION, SEE SECTION 8): Isolate area. Eliminate ALL sources of ignition. Avoid skin contact. Scrape up. Remove soiled clothing.
WASTE DISPOSAL - USE APPROPRIATE METHOD(S): Disposal of unexploded or deteriorated explosives material can be hazardous. Expert assistance is positively recommended in destroying explosives. Accidents can be prevented by thorough planning and handling in accordance with approved methods. Consult your supervisor, or the nearest SEC Regional Office for assistance. If improperly disposed of, material could explode and cause death or serious injury.

In all cases, follow facility emergency response procedures. Contact Facility Environmental Manager for assistance. Report any discharge of oil or hazardous substance that may enter surface waters to the National Response Center (800) 424 - 8802.

Observe all applicable local, state, and federal environmental spill and water quality regulations.

SECTION 11 - PHYSICAL DATA

BOILING POINT:	NA	*BULK DENSITY:*	1.20 g/cc
MELTING POINT:	NA	*%VOLATILE BY VOLUME:*	NA
VAPOR PRESSURE:	NA	*EVAPORATION RATE (ETHER=1):*	NA
SOLUBILITY IN WATER:	Negligible with short term exposure	*DECOMPOSITION POINT:*	200° C
APPEARANCE/ ODOR:	Odorless, gray/white gel packaged in polyethylene cartridges		

SECTION 12 - COMMENTS

This product is classified as a Class 1.1D High Explosive and must be stored in a high explosive magazine. Storage should be in a well constructed, well ventilated, dry structure located to conform to local, state, and federal regulations. The area surrounding an explosive magazine must be kept clear of combustible materials for a distance of 50 feet. Magazine floors and containers must be properly cleaned. Normal operating conditions are assumed unless otherwise stated. If any given information is not clear or does not apply to your situation, STOP, store the material suitably, and seek correct help from your supervisors or the Institute of Makers of Explosives. Bureau of Alcohol, Tobacco, and Firearms regulations for explosive storage and handling should be consulted and complied with. Disposal sites must be clear of people at the time of disposal.

NOTICE: The data and recommendations presented herein are based upon data which are considered to be accurate. However, SEC makes no guarantee or warranty, either expressed or implied, of the accuracy or completeness of these data and recommendations.

For more detailed information on the hazards of this product, contact the Regulatory Compliance Department at the address below:

DetaCorp, PO Box 462, Columbus, Kansas 66724, (620) 597-2552.

Slurran 805/806

Material Safety Data Sheet

5700 N. Portland, Suite 301 / Oklahoma City, OK 73112 / Phone: (405) 947-0765 / Fax: (405) 947-0768

SECTION 1 - PRODUCT INFORMATION

TRADE NAME:	Slurran 805, Slurran 806
SYNONYM:	NA
CHEMICAL FAMILY:	Watergel Slurry Explosive
FORMULA:	Mixture
CAS NUMBER:	None
UN/NA NUMBER:	UN0332
DOT HAZARD CLASS:	Explosive, Blasting, Type E, Class 1.5 D

SECTION 2 - HEALTH ALERT

DANGER - If misused or disposed of improperly, material could explode and cause death or serious injury.
DO NOT HANDLE WHEN IN DOUBT!!
See section VIII - Personal Protection
CHEM-TEL, INC. (800) 255-3924.

SECTION 3 - HEALTH HAZARD INFORMATION

EYE May cause moderate irritation.
SKIN: May cause moderate irritation characterized my redness and/or rash.
INHALATION: Inhalation of decomposed products may irritate the respiratory tract. Prolonged exposure to these fumes may result in respiratory difficulties (shortness of breath, etc.) and possibly more severe toxic effects.
INGESTION: Swallowing large quantities may cause toxicity characterized by dizziness, bluish skin coloration, methemoglobinemia, unconsciousness, abdominal spasms, nausea, and pain.

SECTION 4 - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush with large amounts of water. Seek medical aid.
SKIN CONTACT: Remove contaminated clothing. Wash skin thoroughly with soap and water.
INHALATION: Remove from exposure. If breathing stops or is difficult, administer artificial respiration or oxygen. Seek medical aid.
INGESTION: Give 8-16 oz. of milk or water. Induce vomiting. Seek medical aid.

SECTION 5 - RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT/ HAZARDOUS INGREDIENTS

EXPOSURE LIMIT (PRODUCT): None required for product.

HAZARDOUS INGREDIENTS:	PERCENT	EXPOSURE LIMIT	PPM	MG/M3
Ammonium Nitrate	<75	NONE		
Sodium Nitrate	<5	NONE		
Sodium Perchlorate	<5	NONE		
Nitric Acid*	<8	ACGIH - TLV	2	5
Hexamine*	<15	NONE		
Aluminum	<3	ACGIH - TLV	10	

*React to form Hexaminedinitrate
NOTE: All ingredients are present in a gelled slurry matrix and individual hazard may not be present in this formulation.

SECTION 6 - REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY: Heat (confinement); Stacking (burning).
INCOMPATIBILITY: Can react violently or explode, with reducing agents and organic materials. Avoid amines, strong alkalies & acids.HAZARDOUS REACTION / DECOMPOSITION PRODUCTS: At high temperatures, especially >374 F, may emit severe toxic fumes of nitrogen oxides.
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: Not applicable.

SECTION 7 - FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT & METHOD: NA AUTO IGNITION TEMPERATURE: Explodes
FLAMMABLE LIMITS (% BY VOLUME/AIR): LOWER: NA UPPER: NA
EXTINGUISHING MEDIA: Water
FIRE-FIGHTING PROCEDURES: When explosive is burning, EVACUATE AREA. Avoid breathing vapor
FIRE & EXPLOSION HAZARDS: Dangerous when exposed to heat or flame. Can support combustion of other materials involved in a fire and is capable of undergoing detonation if heated to high temperatures especially under confinement including being piled on itself in a burning fire When heated to decomposition, highly toxic fumes may be emitted. Do not return to area of explosion until smoke and fumes have dissipated Dry alkali or amine salts are explosive.

Slurran 805/806

Material Safety Data Sheet

SECTION 8 - PERSONAL PROTECTION INFORMATION

EYE PROTECTION: Safety goggles approved for the handling of explosives materials.
SKIN PROTECTION: Neoprene, natural rubber, polyethylene or polyvinyl chloride gloves. Use barrier creams, hand protection and protective clothing.
RESPIRATORY PROTECTION: Not normally required. Mechanical filter or supplied air type respirator as required for concentrations exceeding the occupational exposure limit.
VENTILATION: Maintain adequate ventilation. Use local exhaust if needed.

SECTION 9 - PERSONAL HANDLING INSTRUCTIONS

HANDLING: Explosives should not be abandoned at any location for any reason. Do not handle during electrical storms.
STORAGE: Store in a cool, dry, well-ventilated area remote from operations. Storage area should be of non-combustible construction.
Organic materials, flammable substances and finely divided metals should be stored separately. Flames, smoking and unauthorized personnel are prohibited where this product is used or stored. Protect against physical damage, static electricity and lightning.
WARNING: Use of this product by persons lacking adequate training, experience and supervision may result in death or serious injury.
Obey all Federal, State, and local laws / regulations applicable to transportation, storage, handling, and use of explosives.
DISTANCE: Always stay from area of explosion or disposal sites. Stay behind suitable barriers.

SECTION 10 - SPILL & LEAK PROCEDURES

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED (IN ADDITION, SEE SECTION 8): Isolate area. Eliminate ALL sources of ignition. Avoid skin contact. Scrape up. Remove soiled clothing.
WASTE DISPOSAL - USE APPROPRIATE METHOD(S): Disposal of unexploded or deteriorated explosives material can be hazardous. Expert assistance is positively recommended in destroying explosives. Accidents can be prevented by thorough planning and handling in accordance with approved methods. Consult your supervisor, or the nearest SEC Regional Office for assistance. If improperly disposed of, material could explode and cause death or serious injury.

In all cases, follow facility emergency response procedures. Contact Facility Environmental Manager for assistance. Report any discharge of oil or hazardous substance that may enter surface waters to the National Response Center (800) 424 - 8802.

Observe all applicable local, state, and federal environmental spill and water quality regulations.

SECTION 11 - PHYSICAL DATA

BOILING POINT:	NA	BULK DENSITY:	1.25 g/cc
MELTING POINT:	NA	%VOLATILE BY VOLUME:	NA
VAPOR PRESSURE:	NA	EVAPORATION RATE (ETHER=1):	NA
SOLUBILITY IN WATER:	Negligible with short term exposure	APPEARANCE/ ODOR:	Odorless,gray/white gel
DECOMPOSITION POINT:	200 C		

SECTION 12 – COMMENTS

This product is classified as a Blasting Agent and need not be stored in a high explosive magazine, except where required by local regulations, as long as it is completely separate from any high explosives. Storage should be in a well constructed, well ventilated, dry structure located to conform with local, state, and federal regulations. The area surrounding an explosive magazine must be kept clear of combustible materials for a distance of 50 feet. Magazine floors and containers must be properly cleaned. Normal operating conditions are assumed unless otherwise stated. If any given information is not clear or does not apply to your situation, STOP, store the material suitably, and seek correct help from your supervisors, Institute of Makers of Explosives or Slurry Explosive Corporation.

Disposal sites must be clear of people at the time of disposal.

NOTICE: The data and recommendations presented herein are based upon data which are considered to be accurate. However, SEC makes no guarantee or warranty, either expressed or implied, of the accuracy or completeness of these data and recommendations.
For more detailed information on the hazards of this product, contact the Regulatory Compliance Department at the address below:

Slurry Explosive Corporation
P. O. Box 348
Columbus, Kansas 66725
(316) 597-2552

Revised 6-2001

Material Safety Data Sheet

Dyno Nobel Inc.
2650 Decker Lake Boulevard, Suite 300
Salt Lake City, Utah 84119
Phone: 801-364-4800 Fax: 801-321-6703
E-Mail: dnna.hse@am.dynonobel.com
FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300
CANUTEC (CANADA) 613-996-6666

MSDS # 1122
Date 05/13/05

Supercedes
MSDS # 1122 01/24/05

SECTION I - PRODUCT IDENTIFICATION

Trade Name(s):

- NONEL® MS
- NONEL® LP
- NONEL® SL
- NONEL® TD
- NONEL® MS CONNECTOR
- NONEL® TWINPLEX™
- NONEL® STARTER
- NONEL® EZ DET®
- NONEL® EZTL™
- NONEL® EZ DRIFTER ®
- OPTIMIZER® OPTISLIDE®
- OPTIMIZER® OPTISURFACE®
- OPTIMIZER® OPTI-TL®

Product Class: NONEL® Non-electric Delay Detonators

Product Appearance & Odor: Aluminum cylindrical shell with varying length and diameter of attached colored plastic tubing. The detonator may be enclosed in a plastic housing, and an assembly may contain two detonators. Odorless.

DOT Hazard Shipping Description: Detonators, non-electric 1.1B UN0029 II
-or- Detonator assemblies, non-electric 1.1B UN0360 II
-or- Detonator assemblies, non-electric 1.4B UN0361 II

NFPA Hazard Classification: Not Applicable (See Section IV - Special Fire Fighting Procedures)

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS#	Occupational Exposure Limits OSHA PEL-TWA	ACGIH TLV-TWA
Pentaerythritol Tetranitrate (PETN)	78-11-5	None[1]	None[2]
Lead Azide	13424-46-9	0.05 mg (Pb)/m^3	0.05 mg (Pb)/m^3
Lead	7439-92-1	0.05 mg (Pb)/m^3	0.05 mg (Pb)/m^3
Silicon	7440-21-3	15 mg / m^3 (total dust) 5 mg / m^3 (respirable fraction)	10 mg / m^3
Selenium	7782-49-2	0.2 mg/m^3	0.2 mg/m^3
Red Lead (Lead tetroxide)	1314-41-6	0.05 mg (Pb)/m^3	0.05 mg (Pb)/m^3
Titanium dioxide	13463-67-7	15 mg/m^3	10 mg/m^3
Barium Chromate	10294-40-3	1 mg (CrO_3)/10m^3 (ceiling) 0.5 mg (Ba)/m^3	0.01 mg (Cr)/m^3 0.5 mg (Ba)/m^3
Lead Chromate	7758-97-6	0.05 mg (Pb)/m^3 1 mg (CrO_3)/10m^3 (ceiling)	0.15 mg (Pb)/m^3 0.012 mg (Cr)/m^3
Barium Sulfate	7727-43-7	0.5 mg (Ba)/m^3	10 mg/m^3
Potassium Perchlorate[3]	7778-74-7	None[1]	None[2]
Silica (crystalline)	61790-53-2	See Note Below	0.05 mg/m^3 (resp frac)
Molybdenum	7439-98-7	None[1]	None[2]

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Tungsten	7440-33-7	None[1]	5 mg/m^3 (TWA) 10 mg/m^3 (STEL)
Aluminum	7429-90-5	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	5 mg/m^3
Antimony	7440-36-0	0.5 mg/m^3	0.5 mg/m^3
Cyclotetramethylene Tetranitramine (HMX)	2691-41-0	None[1]	None[2]

[1] Use limit for particulates not otherwise regulated (PNOR): Total dust, 15 mg/m^3 ; respirable fraction, 5 mg/m^3 .
[2] Use limit for particulates not otherwise classified (PNOC): Inhalable particulate, 10 mg/m^3 ; respirable part., 3 mg/m^3 .
Note: The OSHA PEL for crystalline silica is calculated as follows.
Quartz, respirable: 10 mg/m^3 [e] / % SiO_2 + 2 Quartz, total dust: 30 mg/m^3 / % SiO_2 + 2
[3] Not all delay periods contain perchlorate. Those that do contain between from about 4 to a maximum of about 60 mg perchlorate per detonator.

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

SECTION III - PHYSICAL DATA

Boiling Point: Not Applicable
Vapor Density: Not Applicable
Percent Volatile by Volume: Not Applicable
Evaporation Rate (Butyl Acetate = 1): Not Applicable
Vapor Pressure: Not Applicable
Density: Not Applicable
Solubility in Water: Not Applicable

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable **Flammable Limits:** Not Applicable
Extinguishing Media: (See Special Fire Fighting Procedures section.)
Special Fire Fighting Procedures: Do not attempt to fight fires involving explosive materials. Evacuate all personnel to a predetermined safe, distant location. Allow fire to burn unless it can be fought remotely or with fixed extinguishing systems (sprinklers).
Unusual Fire and Explosion Hazards: Can explode or detonate under fire conditions. Burning material may produce toxic vapors.

SECTION V - HEALTH HAZARD DATA

Effects of Overexposure

This is a packaged product that will not result in exposure to the explosive material under normal conditions of use Exposure concerns are primarily with post-detonation reaction products, particularly heavy metal compounds.

Eyes: No exposure to chemical hazards anticipated with normal handling procedures. Particulates in the eye may cause irritation, redness, swelling, itching, pain and tearing.
Skin: No exposure to chemical hazards anticipated with normal handling procedures. Exposure to post-detonation reaction products may cause irritation.
Ingestion: No exposure to chemical hazards anticipated with normal handling procedures. Post-detonation reaction product residue is toxic by ingestion. Symptoms may include gastroenteritis with abdominal pain, nausea, vomiting and diarrhea. See systemic effects below.

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Inhalation: Not a likely route of exposure. See systemic effects below.
Systemic or Other Effects: None anticipated with normal handling procedures. Repeated inhalation or ingestion of post-detonation reaction products may lead to systemic effects such as respiratory tract irritation, ringing of the ears, dizziness, elevated blood pressure, blurred vision and tremors. Heavy metal (lead) poisoning can occur.
Carcinogenicity: ACGIH classifies Lead as a "Suspected Human Carcinogen" and insoluble Chromium VI as "Confirmed Human Carcinogen". NTP, OSHA, and IARC consider components contained in this detonator carcinogenic.

Perchlorate: Perchlorate can potentially inhibit iodide uptake by the thyroid and result in a decrease in thyroid hormone. The National Academy of Sciences (NAS) has reviewed the toxicity of perchlorate and has concluded that even the most sensitive populations could ingest up to 0.7 microgram perchlorate per kilogram of body weight per day without adversely affecting health. The USEPA must establish a maximum contaminant level (MCL) for perchlorate in drinking water by 2007, and this study by NAS may result in a recommendation of about 20 ppb for the MCL.

Emergency and First Aid Procedures

Eyes: Irrigate with running water for at least fifteen minutes. If irritation persists, seek medical attention.
Skin: Wash with soap and water.
Ingestion: Seek medical attention.
Inhalation: Not applicable.
Special Considerations: None

SECTION VI - REACTIVITY DATA

Stability: Stable under normal conditions, may explode when subjected to fire, supersonic shock or high-energy projectile impact.
Conditions to Avoid: Keep away from heat, flame, ignition sources, impact, friction, electrostatic discharge and strong shock. Do not attempt to disassemble.
Materials to Avoid (Incompatibility): Corrosives (acids and bases or alkalis).
Hazardous Decomposition Products: Carbon Monoxide (CO), Nitrous Oxides (NO_X), Sulfides, Chromates, Lead (Pb), Antimony (Sb) and various oxides and complex oxides of metals.
Hazardous Polymerization: Will not occur.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in Case Material is Released or Spilled: Protect from all ignition sources. In case of fire evacuate all personnel to a safe distant area and allow to burn or fight fire remotely. Notify authorities in accordance with emergency response procedures. Only personnel trained in emergency response should respond. If no fire danger is present, and product is undamaged and/or uncontaminated, repackage product in original packaging or other clean DOT approved container. Ensure that a complete account of product has been made and is verified. If loose explosive powder is spilled, such as from a broken detonator, only properly qualified and authorized personnel should be involved with handling and clean-up activities. Spilled explosive powder is extremely sensitive to initiation and may detonate. Follow applicable Federal, State, and local spill reporting requirements.

Waste Disposal Method: Disposal must comply with Federal, State and local regulations. If product becomes a waste, it is potentially regulated as a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR, part 261. Review disposal requirements with a person knowledgeable with applicable environmental law (RCRA) before disposing of any explosive material.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Ventilation: None required for normal handling. Provide enhanced ventilation after use if in underground mines or other enclosed areas.

Respiratory Protection: None required for normal handling.

Protective Clothing: Cotton gloves are recommended.

Eye Protection: Safety glasses are recommended.

Other Precautions Required: None.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Store in cool, dry, well-ventilated location. Store in compliance with Federal, State, and local regulations. Only properly qualified and authorized personnel should handle and use explosives. Keep away from heat, flame, ignition sources, impact, friction, electrostatic discharge and strong shock.

Precautions to be taken during use: Use accepted safe industry practices when using explosive materials. Unintended detonation of explosives or explosive devices can cause serious injury or death. Avoid breathing the fumes or gases from detonation of explosives. Detonation in confined or unventilated areas may result in exposure to hazardous fumes or oxygen deficiency.

Other Precautions: It is recommended that users of explosive materials be familiar with the Institute of Makers of Explosives Safety Library Publications.

Material Safety Data Sheet

SECTION X - SPECIAL INFORMATION

These products contain the following substances that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Chemical Name	CAS Number	Max. lbs/1000 units
Lead	7439-92-1	39.4
	(Use Toxic Chemical Category Code)	
Lead Compounds	N420	2.0
Barium Compounds	N040	1.8
Chromium Compounds	N090	1.9

Range* of Section 313 Chemicals in each product

Product	lb Pb per 1000 detonators	lb Pb compounds per 1000 detonators	lb Ba compounds per 1000 detonators	lb Cr compounds per 1000 detonators
NONEL® MS	0 - 27	0.3 – 1.5	0 – 0.9	0 – 0.9
NONEL® LP	0 - 30	0.3 – 2.0	0 - 1.8	0 - 1.9
NONEL® SL	7 - 27	0.3 – 1.5	0	0
NONEL® TD	0 - 18	0.3 – 0.7	0	0
NONEL® MS Connector	5 - 16	0.3 – 0.4	0	0
NONEL® TWINPLEX™	5 - 15	0.3 – 0.7	0	0
NONEL® STARTER	0	0.3	0	0
NONEL® EZ DET®	22 - 36	2.0	0	0
NONEL® EZTL™	5 - 15	0.5 – 0.7	0	0
NONEL® EZ DRIFTER	39.4	1.3	1.2	1.3
NONEL® OPTISLIDE®	0	0	0	0
NONEL® OPTISURFACE®	0	0	0	0
NONEL® OPTI-TL®	0	0	0	0

*** The exact quantity and weight percent of Section 313 Chemicals in each delay period and tubing length for each product is available upon request.**

Disclaimer

Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, the information contained herein, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. The information contained herein is provided for reference purposes only and is intended only for persons having relevant technical skills. Because conditions and manner of use are outside of our control, the user is responsible for determining the conditions of safe use of the product. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product or information. Under no circumstances shall either Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.

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Agrium Material Safety Data Sheet

NFPA Classification	DOT / TDG Pictograms	WHMIS Classification	HMIS		PROTECTIVE CLOTHING
			Health 1 Flammability 0 Reactivity 1 PPE E		

Section I. Chemical Product and Company Identification

PRODUCT NAME/ TRADE NAME	**Ammonium Nitrate Industrial Grade Mini Prill**

SYNONYM	Ammonium Nitrate Miniprills	MSDS NUMBER:	12958
CHEMICAL NAME	Ammonium nitrate.	REVISION NUMBER	4.10
CHEMICAL FAMILY	Nitrate salt. (Oxidizing agent)	MSDS prepared by the Environment, Health and Safety Department on:	August 30, 2010
CHEMICAL FORMULA	NH_4NO_3	24 HR EMERGENCY TELEPHONE NUMBER: Transportation: 1-800-792-8311 Medical: 0-303-389-1653 Collect	
MATERIAL USES	Industrial applications: Manufacture of chemical products and specialty fertilizers.		

MANUFACTURER	SUPPLIER
Agrium North American Wholesale 13131 Lake Fraser Drive, S.E. Calgary, Alberta, Canada, T2J 7E8 Agrium U.S. Inc. Suite 1700, 4582 South Ulster St. Denver, Colorado, U.S.A., 80237	Agrium North American Wholesale 13131 Lake Fraser Drive, S.E. Calgary, Alberta, Canada, T2J 7E8 Agrium U.S. Inc. Suite 1700, 4582 South Ulster St. Denver, Colorado, U.S.A., 80237

Section II. Hazardous Ingredients

		Exposure Limits (ACGIH)						
NAME	CAS #	TLV-TWA mg/m³	TLV-TWA ppm	STEL mg/m³	STEL ppm	CEIL mg/m³	CEIL ppm	% by Weight
Ammonium nitrate	6484-52-2	—						99.8

ACGIH TLV notations:
— No assigned TLV
(C) - Ceiling - the concentration not to be exceeded at any time
(I) - measured as the Inhalable fraction of the aerosol
(R) - measured as the Respirable fraction of the aerosol
(T) - measured as the Thoracic fraction of the aerosol

TOXICOLOGICAL DATA ON INGREDIENTS

Ammonium Nitrate:^

Rat oral LD50: 4500 mg/kg. [Peer Reviewed] [Environment Canada;Tech Info for Problem Spills. Ammonium Nitrate (Draft) p.59 (1981)]
Rat oral LD50: 2217 mg/kg (Rat) [Gigiena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1936- (52(8),25,1987)]
Huntingdon Research Center Testing Results (3 studies), OECD Guide 401: 2462- 2900 mg/kg (rat oral)
TFI Product Testing Results, OECD Guideline 402: > 5,000 mg/kg acute dermal LD_{50}, rat,
Bacterial reverse mutation assay: negative, with and without metabolic activation, (Salmonella)
Developmental terotogenicity: Not teratogenic to rats. NOAEL >57 mg/kg

Ecotoxicity Values:
Acute fish toxicity: Chinook salmon, rainbow trout, bluegill. 96hr LC_{50} = 420-1360 mg NO_3/L

Continued on Next Page

Acute toxicity to aquatic invertibrates: Daphnia magna EC_{50} = 555mg/L
Acute toxicity to aquatic plants (algae): Scenedesmus quadricauda EC_{50} = 83mg/L
LD50 Aspergillus niger (fungus) 15 mg/l/40 hr (36 deg C). [Peer Reviewed] [Environment Canada; Tech Info]

Section III. Hazards Identification.

POTENTIAL ACUTE HEALTH EFFECTS	May interfere with the oxygen carrying capacity of the blood if ingested in large quantities or over a prolonged period of time. Persons with anemia, bowel diseases, or infants, are more likely to develop effects. Over-exposure by ingestion is unlikely under normal working conditions. Inhalation of dusts may cause respiratory irritation. This product may irritate eyes and skin upon contact but is unlikely to injure tissue.
	Symptoms of overexposure may include: Cardiovascular: methemoglobinemia, low blood pressure (hypotension), irregular heart beat (arrhythmia), shock (vasodilation) CNS: headache, dizziness, generalized tingling sensation (parasthesia) Gastrointestinal: nausea, vomiting, diarrhea, abdominal pain Eye: redness and inflammation (conjunctivitis) Skin: bluish discoloration (cyanosis) with profuse sweating following ingestion or irritation and flushed skin following contact with moist skin surfaces.
POTENTIAL CHRONIC HEALTH EFFECTS	**CARCINOGENIC EFFECTS:** NONE by ACGIH, EPA, IARC, NTP, OSHA. **MUTAGENIC EFFECTS:** NONE by ACGIH, EPA, IARC, NTP, OSHA. **TERATOGENIC EFFECTS:** NONE by ACGIH, EPA, IARC, NTP, OSHA. Repeated or prolonged overexposure by ingestion can reduce the oxygen carrying capacity of the blood producing anoxia in infants or individuals with preexisting bowel or blood diseases.

Section IV. First Aid Measures

EYE CONTACT	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Obtain medical attention if irritation persists.
MINOR SKIN CONTACT	May cause skin irritation. Wash contaminated skin with soap and water. Cover dry or irritated skin with a good quality skin lotion. If irritation persists, seek medical attention.
EXTENSIVE SKIN CONTACT	No additional information.
MINOR INHALATION	Inhalation of dust may produce irritation, burning, sneezing and coughing. Long term exposure may cause headache, nausea or weakness. Loosen tight clothing. Allow affected persons to rest in a well ventilated area. Obtain medical attention if irritation persists.
SEVERE INHALATION	In emergency situations use proper respiratory protection to evacuate affected individuals to a safe area as soon as possible. Loosen tight clothing around the person's neck and waist. Oxygen may be administered if breathing is difficult. If the person is not breathing, perform artificial respiration. Obtain immediate medical attention.
SLIGHT INGESTION	Have conscious person drink several glasses of water or milk. Induce vomiting. Lower the head so that the vomit will not reenter the mouth and throat. NEVER give an unconscious person anything to drink. Obtain medical attention.
EXTENSIVE INGESTION	No additional information.

Section V. Fire and Explosion Data

THE PRODUCT IS	Non-flammable.
AUTO-IGNITION TEMPERATURE	Not applicable.
FLASH POINT	Not applicable.
FLAMMABILITY LIMITS	Not applicable.

Continued on Next Page

PRODUCTS OF COMBUSTION	Material will not burn, but thermal decomposition may result in flammable/toxic gases being formed. These products are nitrogen oxides and ammonia (NO, NO_2, NH_3).
FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	Not applicable.
EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	Oxidizer: Material is an oxidizer which may react readily with other materials, especially upon heating. In confinement and in the presence of a strong detonation source, the material can explode when subject to sudden shock, pressure, or high temperature. Avoid temperatures above 210 °C (410 °F) which may cause thermal decomposition or explosion, especially in confined or poorly ventilated spaces. Incompatible with sulfur, chlorides, reducing agents, or other oxidizers. Incompatible with finely powdered metals (cadmium, copper, lead, cobalt, nickel, bismuth, chromium, magnesium, zinc, sodium, potassium and aluminum).
FIRE FIGHTING MEDIA AND INSTRUCTIONS	Oxidizing material. Cool containing vessels with water jet in order to prevent pressure build-up, or explosion. Use flooding quantities of water. Evacuate surrounding area. Material will not burn. Melts and undergoes thermal decomposition at elevated temperatures to release visible clouds of toxic and combustible gases (ammonia, carbon dioxide, and oxides of nitrogen). If fumes or gases may be present, fire fighters should wear self-contained breathing apparatus.
SPECIAL REMARKS ON FIRE HAZARDS	Material supports combustion. Powerful oxidizing agent, supports combustion by liberating oxygen even if smothered. Avoid temperatures above 210°C (410°F) in confined or poorly ventilated spaces. Explosive when exposed to heat or flame under confinement. Avoid pressure build-up. Thermal decomposition or explosion may result. Ventilate to cool and flood with water to stop decomposition reaction. Contain and collect all runoff for treatment. Prevent fire water from reaching water courses or aquifers.
SPECIAL REMARKS ON EXPLOSION HAZARDS	Industry studies have identified that "Cigar burn" is considered to be a hazard primarily when the ammonium nitrate content of a chemical blend is between 20-40%. Cigar burn is a rare phenomenon which requires the combustion of a separate combustable material such as sulfur which can cause the thermal decomposition of ammonium nitrate.

Section VI. Accidental Release Measures

SMALL SPILL	Use appropriate tools to put the spilled solid in a convenient container for reuse or disposal.
LARGE SPILL	In the event of a spill, prevent additional discharge of material, if possible to do so without hazard. Prevent spills from entering sewers, watercourses, wells, etc. Product will promote algae growth which may degrade water quality and taste. Notify downstream water users. Nitrate in potable drinking water should be maintained below 10 mg/L. Will dissolve and disperse in water. Put the material into a suitable container for reuse or disposal.

Section VII. Handling and Storage

PRECAUTIONS	Keep away from heat, combustible materials, and reducing agents. Avoid contact with skin and eyes. DO NOT ingest or breathe dust. Take precautions against electrostatic discharges. Keep out of reach of children. Keep away from food, drink and animal feed.
STORAGE	Store in a dry, cool and well-ventilated area. Keep away from food, drink and animal feeds. Keep away from combustible materials. Keep away from incompatible materials. Do not blend or store in contact with urea. Dry urea and dry ammonium nitrate will react together to produce a slurry.

Continued on Next Page

Section VIII. Exposure Controls/Personal Protection

ENGINEERING CONTROLS	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.
PERSONAL PROTECTION	The selection of personal protective equipment varies, depending upon conditions of use. Wear appropriate respiratory protection for dust/mist when ventilation is inadequate. A filtering facepiece dust mask is recommended for most applications if respiratory protection is needed. Where skin and eye contact may occur as a result of brief periodic exposures, wear long sleeved clothing, coveralls, chemical resistant gloves, and safety glasses with side shields.
PERSONAL PROTECTION IN CASE OF LARGE RELEASE	No additional information.
EXPOSURE LIMITS	Alberta TWA: 10 mg/m^3 Inhalable, 3 mg/m^3 Respirable, for Particulate Not Otherwise Regulated. Fed OSHA PEL: 15 mg/m^3 Total dust, 5 mg/m^3 Respirable fraction, for Particulates Not Otherwise Regulated. Federal, State or Provincial exposure limits may vary by jurisdiction. Consult local authorities for acceptable exposure limits in your area.

Section IX. Physical and Chemical Properties

PHYSICAL STATE AND APPEARANCE	Solid. (Prills or granules.)		
MOLECULAR WEIGHT	Not applicable.	COLOR	White
pH (10% SOLN/WATER)	6	ODOR	Odorless.
BOILING POINT	Decomposes.	ODOR THRESHOLD	Not applicable.
MELTING POINT	170°C (338°F)	TASTE	Disagreeable. Acrid. (Strong.)
CRITICAL TEMPERATURE	Not applicable.	VOLATILITY	Not applicable.
SPECIFIC GRAVITY g/cc	0.93 (Water = 1)	SOLUBILITY	Easily soluble in cold water, hot water.
BULK DENSITY kg/m^3 ; lbs/ft^3	Loose: 920 kg/m^3; 57.5 lbs/ft^3 Tapped: 1000 kg/m^3; 62.4 lbs/ft^3;	DISPERSION PROPERTIES	See solubility in water, methanol, acetone.
VAPOR PRESSURE	0 mm of Hg (@ 20°C)	WATER/OIL DIST. COEFF.	Not available.
VAPOR DENSITY	Not applicable.		

Section X. Stability and Reactivity Data

STABILITY	The product is stable.
INSTABILITY TEMPERATURE	Not available.
CONDITIONS OF INSTABILITY	No additional remark.
INCOMPATABILITY WITH VARIOUS SUBSTANCES	Highly reactive with combustible materials. Slightly reactive to reactive with reducing agents, organic materials, metals, moisture. Very slightly to slightly reactive with alkalis. Non-reactive with acids.
CORROSIVITY	Very slightly to slightly corrosive to aluminum, zinc, and copper. Non-corrosive to steel and stainless steel (304 or 316).
SPECIAL REMARKS ON REACTIVITY	Absorbs moisture from the air. Incompatible with magnesium, zinc, sodium, potassium, and other finely powdered metals. May explode by detonation, heat or shock.

Continued on Next Page

SPECIAL REMARKS ON CORROSIVITY	Avoid contact with moisture. Slow hydrolysis may produce acids corrosive to metals. Contact your sales representative or a metallurgical specialist to ensure compatability with system equipment.

Section XI. Toxicological Information

SIGNIFICANT ROUTES OF EXPOSURE	Ingestion. Inhalation.
TOXICITY TO ANIMALS	See Section II.
SPECIAL REMARKS ON TOXICITY TO ANIMALS	Toxic to livestock, wildlife, and domestic animals if directly ingested. Ensure that all spillage is cleaned up. The product is not harmful under normal conditions of careful and responsible use.
OTHER EFFECTS ON HUMANS	Recent studies undertaken by the U.S. Government using Canadian and American databases have determined that ammonium nitrate does not present any risk of gastrointestinal cancer.
SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS	Exposure can cause headache, stomach pains, vomiting and diarrhea. Produces methemoglobin which reduces oxygen supply in the circulating blood. Although predominantly affecting infants, nitrate induced methemoglobinemia has also been documented in adults.
SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS	No additional remark.

Section XII. Ecological Information

ECOTOXICITY	Non-persistent and non-cumulative. May be harmful to livestock and wildlife if ingested. Clean up all spilled material, especially where bulk loading occurs to prevent animal exposure. Aquatic/Marine Toxicity: Will release ammonium ions. Ammonia is a toxic hazard to fish. Avoid spills or release to watercourses. Will disperse with current. Release to watercourses may cause effects down stream from the point of release. U.S. D.O.T.: This material NOT listed as a Marine pollutant.
BOD and COD	Not available.
PRODUCTS OF DEGRADATION	Ammonia and nitrogen oxides (NH_3, NO, NO_2...)
TOXICITY OF THE PRODUCTS OF DEGRADATION	The product itself and its products of degradation are not harmful under normal conditions of use. Avoid spills or releases to watercourses.
SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION	Product will promote algae growth which may degrade water quality and taste. Notify downstream water users. Nitrate in potable drinking water should be maintained below 10mg/L. Will dissolve and disperse in water.

Section XIII. Disposal Considerations

WASTE DISPOSAL OR RECYCLING	Recycle to process, if possible. Recover and place material in a suitable container for intended use or disposal. Ensure disposal complies with government requirements and local regulations.

Section XIV. Transport Information

DOT / TDG CLASSIFICATION	DOT/TDG CLASS 5.1: Oxidizing substance.
PIN and Shipping Name	Proper shipping name: Ammonium nitrate PIN #: UN1942 PG III
SPECIAL PROVISIONS FOR TRANSPORT	U.S. DOT: A1, A29, IB8, IP3

Continued on Next Page

DOT (U.S.A) (Pictograms)

Section XV. Other Regulatory Information and Pictograms

OTHER REGULATIONS

U.S. Allowable Tolerances (FIFRA Requirements):
1. Ammonium nitrate is exempted from the requirement of a tolerance when used as a desiccant or defoliant in the production of cottonseed, grain sorghum, peppers, potatoes, sweet potatoes. 40 CFR 180.1018 (7/1/91)
2. Ammonium nitrate is exempted from the requirement of a tolerance when used as an adjuvant/intensifier for herbicides in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. 40 CFR 180.1001(d) (7/1/91)

FDA Requirements:
1. Bottled water shall, when a composite of analytical units of equal volume from a sample is examined by the methods described in paragraph (d)(1)(ii) of this section, meet the standards of chemical quality and shall not contain nitrate, as nitrogen, in excess of 10.0 mg/l. /Nitrate, as nitrogen. 21 CFR 103.35 (4/1/91)

TSCA - Sect. 8(b) Inventory: XU

California - Air Bill 2588 (Air Toxics Hot Spots) Appendix A-I: 6/91; ADOA 100.0 lbs/yr
California - Toxic Air Contaminant List Category III (AB 1807; AB 2728)
Massachusetts RTK List - Present
NJ Department of Health RTK List: sn 0106
NJ Special Hazardous Substances: (reactive - third degree)
Pennsylvania RTK List: environmental hazard
Rhode Island Hazardous Substance List - Present

EINECS Inventory: 229-347-8

Japan - Existing and New Chemical Substances Inventory: 1-395
Korea - Existing and Evaluated Chemical Substances Inventory: KE-01715
Taiwan - Dangerous and Toxic Materials List: Dangerous material - Oxidizer

CERCLA/SUPERFUND, 40 CFR 117,302: This product contains no Reportable Quantity (RQ) Substances.
SARA HAZARD CATEGORY: This product has been revised according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category(ies):
Immediate Health, Fire, Reactive
The following product is listed in SARA Section 313 (40 CFR Part 372):
Ammonium nitrate, CAS # 6484-52-2 (if in solution and dissociated). Refer to EPA guidance document 745-R-00-006 for information on TRI reporting for nitrates.

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

This product is not considered a priority pollutant as regulated under the Clean Water Act.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product or its ingredients is on the Domestic Substances List (DSL), and acceptable for use under the provisions of CEPA.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.
Canada - WHMIS Classification of Substances: C; D2B

OTHER CLASSIFICATIONS

HCS (U.S.A.)	HCS CLASS: Oxidizer.
DSCL (EEC)	2- Risk of explosion by shock, friction, fire or other sources of ignition. 8- Contact with combustible material may cause fire. 9- Explosive when mixed with combustible material.

Continued on Next Page

National Fire Protection Association (U.S.A.)

Hazards presented under acute emergency conditions only:

Health

Fire Hazard

Reactivity

Specific Hazard

TDG (Pictograms - Canada)

DSCL (Europe) (Pictograms)

ADR (Europe) (Pictograms)

Section XVI. Other Information

REFERENCES

-Transportation of Dangerous Goods Act and Clear Language Regulations, current revision.
-Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
-Domestic Substances List, Canadian Environmental Protection Act.
-29 CFR Part 1910
-33 CFR Parts 151, 153, 154, 156
-40 CFR Parts 1-799
-46 CFR Part 153
-49 CFR Parts 1-199
-American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances, 2009.
-NFPA 704, National Fire Codes Online, National Fire Protection Association, current edition at time of MSDS preparation.
-Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers
-ERG2008 Emergency Response Guidebook
-CHRIS Hazardous Chemical Data: U.S. Coast Guard, Washington, D.C.
-HSDB: Hazardous Substances Data Bank. National Library of Medicine, Bethesda, Maryland
-IRIS: Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, D.C.
-NIOSH: Pocket Guide to Chemical Hazards. National Institute for Occupational Safety and Health, Cincinnati, Ohio
-OHM/TADS: Oil and Hazardous Materials Technical Assistance Data System U.S. Environmental Protection Agency, Washington, D.C.
-RTECS®: Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety and Health, Cincinnati, Ohio
-The Fertilizer Institute Product Testing Program Results, March 2003
-Alberta Workplace Health and Safety, Occupational Health and Safety Code

OTHER SPECIAL CONSIDERATIONS

24 Hr Medical Emergency Contact Number changed.

FOR FURTHER SAFETY, HEALTH, OR ENVIRONMENTAL INFORMATION ON THIS PRODUCT, CONTACT

AGRIUM
Wholesale Environment, Health and Safety
Telephone (780) 998-6906 or Fax (780) 998-6677

Continued on Next Page

NOTICE TO READER

The buyer assumes all risk in connection with the use of this material. The buyer assumes all responsibility for ensuring this material is used in a safe manner in compliance with applicable environmental, health and safety laws, policies and guidelines. Agrium assumes no responsibility or liability for the information supplied on this sheet, including any damages or injury caused thereby. Agrium does not warrant the fitness of this material for any particular use and assumes no responsibility for injury or damage caused directly or indirectly by or related to the use of the material. The information contained in this sheet is developed from what Agrium believes to be accurate and reliable sources, and is based on the opinions and facts available on the date of preparation.

Request #3:

If any of the explosives used by the Company prior to 2002 contained perchlorate, provide a 1) complete description of the substances, 2) indicate the number of explosions per year, 3) approximate volume of perchlorate substances used per explosion, and 4) the storage and disposal practices in effect by the Company at the Site.

Answer:

1) Complete list of substances-
2) Explosions per year-
3) Approximate volume of perchlorate substances per explosion-

Product Name	Substance List (1)	Explo/Yr(2)	Perch.Volume(3)
SEC Detagel	Ammonium Perchlorate	1 in 1999	1-5% of 85 lbs
SEC Slurran 806	Sodium Perchlorate	5 in 1999	<5% of 3935 lbs
SEC Slurran 806	Sodium Perchlorate	2 in 2000	<5% of 1247 lbs
Dyno Non-electric Dets	Potassium Perchlorate	6 in 1999	un known
Dyno Non-electric Dets	Potassium Perchlorate	2 in 2000	un known

See enclosed MSDSs for all chemical components.

4) There was no storage or disposal operation conducted at the Site for any substances from the Company. The only operation conducted at the Site by the Company was rock drilling and blasting for aggregate.

Request #4:

Describe the portion(s) of the Site where the Company conducted blasting or other operation prior to 2002. Provide a scaled map of the Site that includes the locations of any blasts.

Answer:

It is not possible to reconstruct the areas or maps in which the Company conducted blasting operations due to the lack of file backup and/or personnel that were involved in the operations.

The Company can not speculate on the exact location of drilling and blasting operations some 13 years ago. The Company did blasting operations in the quarry confines to produce shot rock for aggregate.

Request #5:

To the best of the Company's knowledge, identify any operators at the Site who also may have used perchlorate during the 1960 to 1980 time period.

Answer:

In the best knowledge of the Company, the Company can not identify any operators that may have conducted operations at the Site during the 1960 to 1980 time period.